1314 MEASUREMENT OF GRADES

Under the commonly accepted system of measuring gradients, grade is defined as the change in elevation divided by the horizontal distance traveled, and is expressed as a percentage.

A grade of 100 percent corresponds to an angle of 45 degrees. A 1 in 3 grade is the same as 33 1/3 percent grade, and a 1 in 2 grade the same as a 50 percent grade.

Table of Gradients

SLOPE	PERCENT GRADE	CORRES-PONDING ANGLE (degrees)	RISE or FALL IN ONE MILE (feet)	RISE or FALL IN ONE KILOMETER (meters)
1 in 1	100.00	45.00	5280	1000.0
1 in 2	50.00	26.57	2640	500.0
1 in 3	33.33	18.43	1760	333.3
1 in 4	25.00	14.03	1320	250.0
1 in 5	20.00	11.32	1056	200.0
1 in 6	16.67	9.47	880	166.7
1 in 7	14.29	8.13	754	142.9
1 in 8	12.50	7.12	660	125.0
1 in 9	11.11	6.33	587	111.1
1 in 10	10.00	5.72	528	100.0
1 in11	9.09	5.20	480	90.9
1 in 12	8.33	4.77	440	83.3
1 in 13	7.69	4.40	406	76.9
1 in 14	7.14	4.08	377	71.4
1 in 15	6.67	3.82	352	66.7
1 in 16	6.25	3.58	330	62.5
1 in 17	5.88	3.37	311	58.8
1 in 18	5.56	3.18	293	55.6
1 in 19	5.26	3.02	278	52.6
1 in 20	5.00	2.87	264	50.0
1 in 25	4.00	2.28	211	40.0
1 in 30	3.33	1.90	176	33.3
1 in 35	2.86	1.63	151	28.6
1 in 40	2.50	1.43	132	25.0